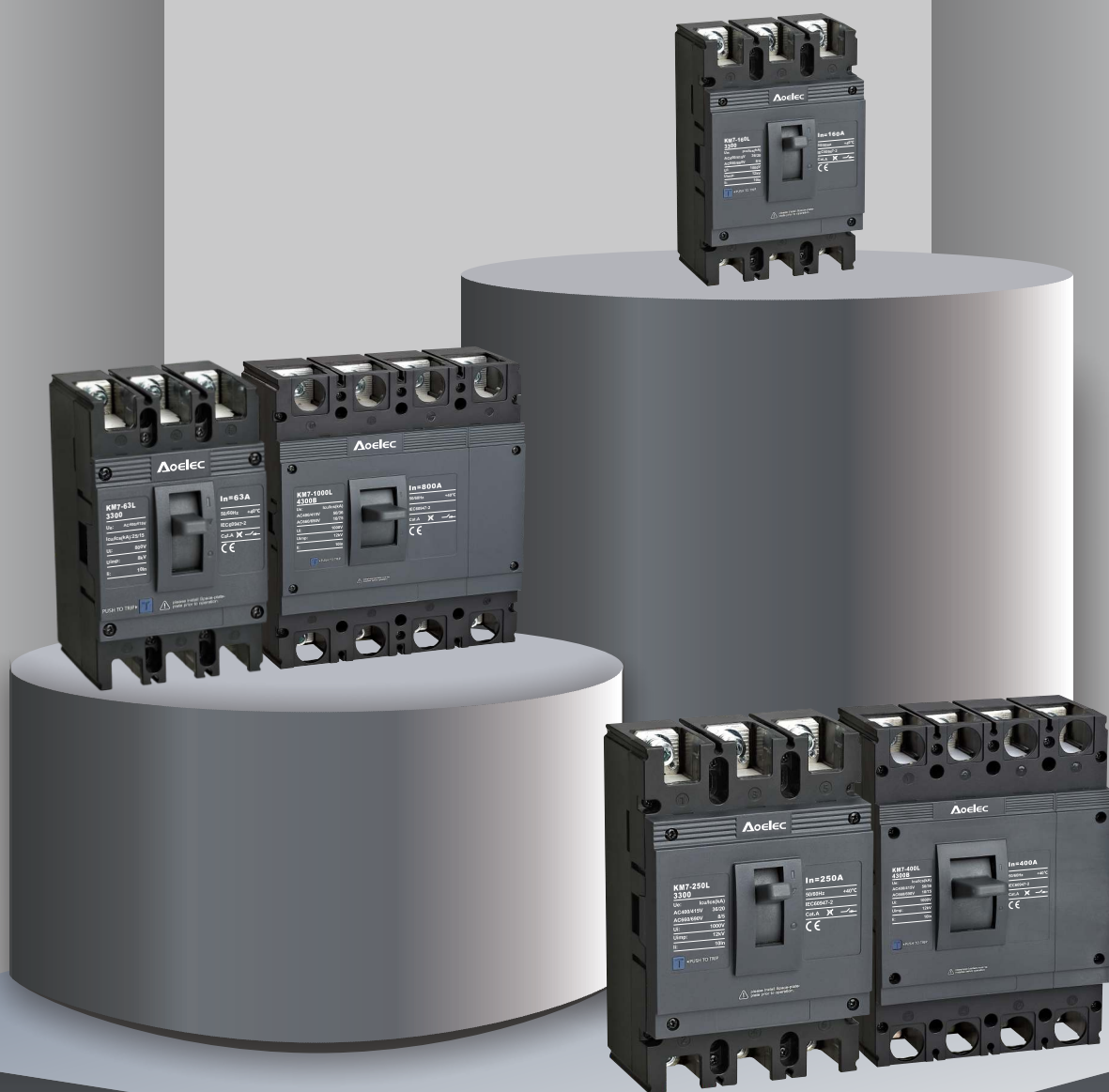




KM7 Molded Case Circuit Breakers



Aoelec
奥来电器

Working for your safety!



KM7-250L/3300

Product Overview

Molded Case Circuit Breakers (MCCBs) provide protection for distribution lines and equipment against overload, short-circuit, and undervoltage conditions. They can also offer protection for infrequent motor starting operations.

Frame Sizes

Rated current: 63、125、160、250、400、630、W630、800、W800、1000A

Rated voltage $U_e(AC)$: (400V/415V, 500V/660V/690V(AC500V/660V/690V)

Breaking Capacity Code: L、M、H

Product Standards

IEC/EN 60947-1 (General Rules)

IEC/EN 60947-2(Circuit-Breakers)

IEC/EN 60947-3(Switches, Disconnectors)

IEC/EN 60947-4(Motors, Actuators)

Extreme Environment Standards

IEC 60068-2-1 (Low Temperature)

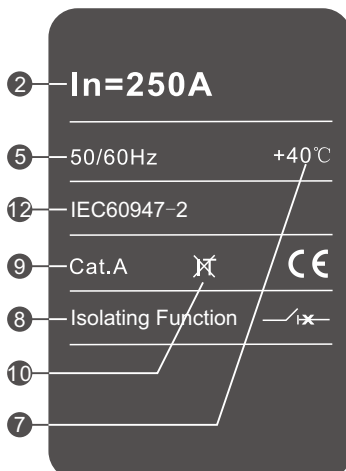
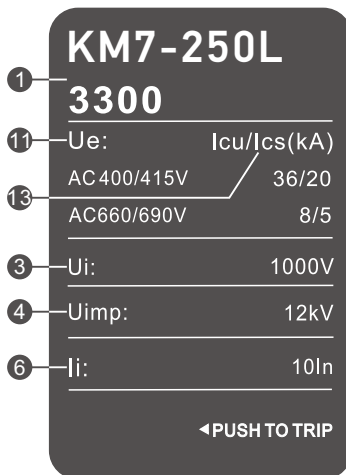
IEC 60068-2-2(High Temperature)

IEC 60068-2-11 (Salt Mist)

IEC 60068-2-30(Damp Heat, Cyclic)

Specific Application Compliance

IEC (Low Voltage Distribution Design Code) Clause 6.3.6 - Overload Alarm without Tripping function



Nameplate Explanation

① Nameplate Explanation:KM7

② In: Rated Current

③ Ui: Rated Insulation Voltage

④ Uimp: Rated Impulse Withstand Voltage

⑤ Rated Frequency

⑥ li: Rated Instantaneous Short-Circuit Current Setting

⑦ 40°C: Reference Ambient Temperature

⑧ Isolating Function

⑨ Cat A: Circuit Breaker Utilization Category

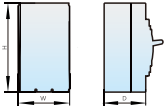
⑩ Not suitable for IT systems

⑪ Ue: Rated Operational Voltage

⑫ Product Compliance Standard(s)

⑬ Icu / Ics: Rated Ultimate Short-Circuit Breaking Capacity / Rated Service Short-Circuit Breaking Capacity

Technical Parameters

Rated Ultimate Frame Current Inm(A)			63			125			160			
Product Appearance												
Rated Current In(A), at 40°C			10,16,20,25 32,40,50,63			80,100,125			100,125,140 160			
Rated Insulation Voltage Ui(V)			800			800			1000			
Rated Impulse Withstand Voltage Uimp(kV)			8			8			8			
Rated Operational Voltage Ue(V), AC 50/60Hz			400/415			400/415			400/415 500/660/690			
Breaking Capacity Code			L	M	H	L	M	H	L	M	H	
Number of Pole	2P		■	-	-	■	-	-	■	-	-	
	3P		■	■	■	■	■	■	■	■	■	
	4P		■	■	■	■	■	■	■	■	■	
Rated Ultimate Short-Circuit Breaking Capacity Icu(kA)	AC400V/415V		25	36	65	25	36	65	36	50	85	
	AC500V/660V/690V		/	/	/	/	/	/	8	10	20	
Rated Service Short-Circuit Breaking Capacity Ics(kA)	AC400V/415V		15	25	50	15	25	50	20	36	65	
	AC500V/660V/690V		/	/	/	/	/	/	5	5	15	
Compliant Standards			IEC/EN 60947-2									
Utilization Category			A			A			A			
Isolating Function (Applicable to Type B & C products)			■			■			■			
Termination Method			Top Entry / Bottom Exit									
Ambient Operating Temperature Range			-35°C~70°C									
Arcing Distance			≤50			≤50			≤50			
Mechanical Endurance (Operations)	Maintenance-Free		20000			20000			20000			
	With Maintenance		40000			40000			40000			
Electrical Endurance (Operations)			AC415V, In	10000			10000			10000		
Release Types & Protection Functions	Magnetic Release	Distribution Protection	■			■			■			
		Motor Protection	■			■			■			
		Generator Protection	-			-			■			
	Thermomagnetic Release	Distribution Protection	■			■			■			
		Motor Protection	■			■			■			
		Generator Protection	-			-			■			
Accessories	Auxiliary Contact		■			■			■			
	Alarm Contact		■			■			■			
	Shunt Release		■			■			■			
	Undervoltage Release		■			■			■			
	Manual Operating Mechanism		■			■			■			
	Motor Operating Mechanism		■			■			■			
	Back Plate Connection		■			■			■			
	Plug-in Version		■			■			■			
	Connecting Busbar		■			■			■			
	Phase Barrier		■			■			■			
Derivative Products	For Prepaid Meter Application		■			■			■			
	Overload Alarm without Tripping		-			-			-			
Overall Dimensions (mm)												
		Width(2P/3P/4P)	56/78/103			56/78/103			107/142			
		Height	130			130			165			
		Depth (L-type, M/H-type)	63. 5/73. 5			63.5/73.5			61.5/87			

■ Technical Parameters

250			400/630			W630/800			W800/1000		
											
180,200,225 250			250,315, 350, 400,500,630			400,500,630, 700,800			630,700,800, 900,1000		
1000			1000			1000			1000		
8			12			12			12		
400/415 500/660/690			400/415 500/660/690			400/415 500/660/690			400/415 500/660/690		
L	M	H	L	M	H	L	M	H	L	M	H
■	-	-	-	-	-	-	-	-	-	-	-
■	■	■	■	■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■	■	■	■	■
36	50	85	50	70	100	50	70	100	50	70	100
8	10	20	10	15	30	15	20	30	15	20	30
20	36	65	36	50	75	36	50	75	36	50	75
5	5	15	7.5	10	20	13	15	20	13	15	20
IEC/EN 60947-2											
A			A			A			A		
■			■			■			■		
Top Entry / Bottom Exit											
-35°C ~ 70°C											
≤50			≤100			≤100			≤100		
20000			10000			10000			8000		
40000			20000			20000			10000		
10000			8000			8000			5000		
■	■	■	■	■	■	■	■	■	■	■	■
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■	■	■	■	■	■	■	■	■	■	■	■
107/142			~140/185			~182/240			~210/280		
165			257			270			280		
61.5/87			97/97			103/103			104/104		

Protection Characteristics

◆ Distribution Protection - Magnetic Release

Magnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance	Single-Pole Tripping Current Setting $I_n(A)$	Tripping Time
Short-Circuit Protection	63	10-63	Fixed Settings	$10I_n, \pm 20\%; I_n \leq 40A, I_i=500A$	$14I_n; I_n \leq 40A, I_i=600A$	< 0.2s
	125	80-125	Fixed Settings	$10I_n, \pm 20\%; I_n \leq 40A, I_i=500A$	$14I_n; I_n \leq 40A, I_i=600A$	
	160	100-160	Fixed Settings	$10I_n, \pm 20\%; I_n \leq 40A, I_i=500A$	$14I_n; I_n \leq 40A, I_i=600A$	
	250	180-250	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	
	400	250-400	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	
	630	400-630	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	
	W630/800	W630:400-630 800:630-800	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	

Single-Pole Operation Test: The short-circuit release shall operate at 120% of the single-pole tripping current setting value.

	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance	Tripping Time
Neutral Pole Protection (4-pole types C/D)	63	10-63	Fixed Settings	$10I_n, \pm 20\%$	< 0.2s
	125	80-125	Fixed Settings	$10I_n, \pm 20\%$	
	160	100-160	Fixed Settings	$10I_n, \pm 20\%$	
	250	180-250	Fixed Settings	$10I_n, \pm 20\%$	
	400	250-400	Fixed Settings	$10I_n, \pm 20\%$	
	630	400-630	Fixed Settings	$10I_n, \pm 20\%$	
	W630/800	W630:400-630 800:630-800	Fixed Settings	$10I_n, \pm 20\%$	
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$10I_n, \pm 20\%$	

◆ Distribution Protection - Thermomagnetic Release

Thermomagnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Tripping Characteristic
Overload Protection	63-800 (1000)	10-1000	Fixed Settings	Fixed: $I^2t = \text{Constant}$ 1.05 I_n (cold state), no trip within 2h ($I_n > 63A$) / 1h ($I_n \leq 63A$) 1.3 I_n (hot state), trip within 2h ($I_n > 63A$) / 1h ($I_n \leq 63A$)
	160-800 (1000)	100-1000	Thermally Adjustable, Magnetically Fixed	I_n adjustable range: (0.7 - 0.8 - 0.9 - 1.0) x I_n

Magnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance	Single-Pole Tripping Current Setting $I_n(A)$	Tripping Time
Short-Circuit Protection	63	10-63	Fixed Settings	$10I_n, \pm 20\%; I_n \leq 40A, I_i=500A$	$14I_n; I_n \leq 40A, I_i=600A$	< 0.2s
	125	80-125	Fixed Settings	$10I_n, \pm 20\%; I_n \leq 40A, I_i=500A$	$14I_n; I_n \leq 40A, I_i=600A$	
	160	100-160	Fixed Settings	$10I_n, \pm 20\%; I_n \leq 40A, I_i=500A$	$14I_n; I_n \leq 40A, I_i=600A$	
	250	180-250	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	
	400	250-400	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	
	630	400-630	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	
	W630/800	W630:400-630 800:630-800	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$10I_n, \pm 20\%$	$14I_n$	

◆ Motor Protection - Magnetic Release

Magnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance	Single-Pole Tripping Current Setting $I_n(A)$	Tripping Time
Short-Circuit Protection	63	10-63	Fixed Settings	$12I_n, \pm 20\%; I_n \leq 40, I_i=500A$	$17I_n; I_n \leq 40A, I_i=600A$	< 0.2s
	125	80-125	Fixed Settings	$12I_n, \pm 20\%; I_n \leq 40, I_i=500A$	$17I_n; I_n \leq 40A, I_i=600A$	
	160	100-160	Fixed Settings	$12I_n, \pm 20\%; I_n \leq 40, I_i=500A$	$17I_n; I_n \leq 40A, I_i=600A$	
	250	180-250	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	
	400	250-400	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	
	630	400-630	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	
	W630/800	W630:400-630 800:630-800	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	

Single-Pole Operation Test: The short-circuit release shall operate at 120% of the single-pole tripping current setting value

	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance
Neutral Pole Protection (4-pole types C/D)	63	10-63	Fixed Settings	$I_n, I_i, \pm 20\%$
	125	80-125	Fixed Settings	$I_n, I_i, \pm 20\%$
	160	100-160	Fixed Settings	$I_n, I_i, \pm 20\%$
	250	180-250	Fixed Settings	$I_n, I_i, \pm 20\%$
	400	250-400	Fixed Settings	$I_n, I_i, \pm 20\%$
	630	400-630	Fixed Settings	$I_n, I_i, \pm 20\%$
	W630/800	W630:400-630 800:630-800	Fixed Settings	$I_n, I_i, \pm 20\%$
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$I_n, I_i, \pm 20\%$

Protection Characteristics

◆ Motor Protection - Thermomagnetic Release

Thermomagnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Tripping Characteristic
verload Protection	63-W800 (1000)	10-1000	Fixed Settings	Fixed: $I^2t = \text{Constant}$ $1.0I_n$ (cold state), no operation $>2h$ $1.2I_n$ (hot state), operation $<2h$ $1.5I_n$, operation $\leq 2\text{min}$ ($10A \leq I_n \leq 25A$), $\leq 4\text{min}$ ($25A < I_n \leq 250A$), $\leq 8\text{min}$ ($250A < I_n \leq 800A$) $7.2I_n$, tripping time $0.5s \leq T_p \leq 5s$ ($10A < I_n \leq 25A$), $4s \leq T_p \leq 10s$ ($25A < I_n \leq 250A$), $6s \leq T_p \leq 20s$ ($250A < I_n \leq 800A$)
	160-W800 (1000)	100-1000	Thermally Adjustable, Magnetically Fixed	In adjustable range: $(0.7 - 0.8 - 0.9 - 1.0) \times I_n$

Magnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance	Tripping Time
Short-Circuit Protection	63	10-63	Fixed Settings	$12I_n, \pm 20\%$; $I_n \leq 40, I_f=500A$	$17I_n$; $I_n \leq 40A, I_f=600A$	$< 0.2s$
	125	80-125	Fixed Settings	$12I_n, \pm 20\%$; $I_n \leq 40, I_f=500A$	$17I_n$; $I_n \leq 40A, I_f=600A$	
	160	100-160	Fixed Settings	$12I_n, \pm 20\%$; $I_n \leq 40, I_f=500A$	$17I_n$; $I_n \leq 40A, I_f=600A$	
	250	180-250	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	
	400	250-400	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	
	630	400-630	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	
	W630/800	W630:400-630 800:630-800	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$12I_n, \pm 20\%$	$17I_n$	

■ Features

◆ Generator Protection - Magnetic Release

Magnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance	Single-Pole Tripping Current Setting $I_n(A)$	Tripping Time
Short-Circuit Protection	160	100-160	Fixed Settings	$5I_n, \pm 20\%(I_n \leq 40A)$	$7I_n$	< 0.2s
	250	180-250	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	
	400	250-400	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	
	630	400-630	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	
	W630/800	W630:400-630 800:630-800	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	

Single-Pole Operation Test: The short-circuit release shall operate at 120% of the single-pole tripping current setting value

	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance	Tripping Time
Neutral Pole Protection (4-pole types C/D)	160	100-160	Fixed Settings	$I_n, I_{li}, \pm 20\%$	< 0.2s
	250	180-250	Fixed Settings	$I_n, I_{li}, \pm 20\%$	
	400	250-400	Fixed Settings	$I_n, I_{li}, \pm 20\%$	
	630	400-630	Fixed Settings	$I_n, I_{li}, \pm 20\%$	
	W630/800	W630:400-630 800:630-800	Fixed Settings	$I_n, I_{li}, \pm 20\%$	
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$I_n, I_{li}, \pm 20\%$	

◆ Generator Protection - Thermomagnetic Release

Thermomagnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Tripping Characteristic
Overload Protection:	63-W800 (1000)	10-1000	Fixed Settings	Fixed: $I^2t = \text{Constant}$ 1.05 I_n (cold state), no trip within 2h ($I_n > 63A$) / 1h ($I_n \leq 63A$) 1.3 I_n (hot state), trip within 2h ($I_n > 63A$) / 1h ($I_n \leq 63A$)
	160-W800 (1000)	100-1000	Thermally Adjustable, Magnetically Fixed	

Magnetic Release	Frame Current $I_{nm}(A)$	Rated Current $I_n(A)$	Short-Circuit Protection Setting Method	Short-Circuit Setting Value $I_n(A)$ & Tolerance	Single-Pole Tripping Current Setting $I_n(A)$	Tripping Time
Short-Circuit Protection	160	100-160	Fixed Settings	$5I_n, \pm 20\% (I_n \leq 40A)$	$7I_n$	< 0.2s
	250	180-250	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	
	400	250-400	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	
	630	400-630	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	
	W630/800	W630:400-630 800:630-800	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	
	W800/1000	W800: 630-800 1000: 800-1000	Fixed Settings	$5I_n, \pm 20\%$	$7I_n$	

■ KM7 Electrical Accessories & Options

